

## REMARKS

In summary, claims 1-30 are pending. Claims 1, 5, 7, 12, 15, 19, 21, 26, and 29 are independent. Claims 15-25 are rejected under 35 U.S.C. § 112, first paragraph (written description). Claims 1-30 are rejected under 35 U.S.C. § 112, first paragraph (written description). Claims 1, 3, 4, 12, 13, 15, 17, 18, 26, and 27 are rejected under 35 U.S.C. § 102(b). Claims 2 and 16 are rejected under 35 U.S.C. 35 § 103(a). Claims 5-8, 10, 11, 14, 19-22, 24, 25, and 28-30 are rejected under 35 U.S.C. 35 § 103(a). Claims 9 and 23 are rejected under 35 U.S.C. 35 § 103(a). Reconsideration in view of the foregoing amendments and following remarks is respectfully requested.

Although unnecessary to overcome the cited references, all independent claims 1, 5, 7, 12, 13, 15, 19, 21, 26, 27, and 29 have been amended without reciting new matter, to clarify that the first and second operating systems are concurrently operated on the same system and to add that they share the same window manager. As explained below, support for the clarification may be found, for example, in paragraphs 0001, 0041, 0042, 0045, FIGS. 2, 3a, 3b, 4, 6, and original claim 1 of the Published Application (2005/0091486) discussing and illustrating concurrent operation of multiple operating systems on the same system. Support for the addition may be found, for example, in paragraph 0067 of the Published Application (2005/0091486) discussing the sharing of a window manager, which may run on the host-side rather than the nexus.

### Telephone Conversation With Examiner

Examiner Shih is thanked telephone conversation conducted on April 29, 2009. Rejections under 35 U.S.C. § 112 were discussed. It appears that the rejections under 35 U.S.C. § 112 are overcome. Proposed claim amendments were discussed. Cited art was discussed. Without further examination in view of the proposed amendments, Examiner could not agree that the proposed amendments overcome the rejections based on the cited art. It was also indicated that the proposed amendments would require another search.

**Rejection of Claims 15-30 and 1-30 Under 35 U.S.C. § 112**

Claims 15-25 are rejected under 35 U.S.C. § 112, first paragraph (written description) allegedly because “computer-readable storage medium” is not supported by the application. (Office Action, pp. 2-3). Also, claims 1-30 are rejected under 35 U.S.C. § 112, first paragraph (written description) allegedly because the term “concurrently,” as in “operating the second execution environment concurrently with the secured execution environment,” in the nine independent claims is not supported by the application. (Office Action, p. 3). Applicants respectfully traverse the rejections.

It is respectfully submitted that the application clearly supports “computer-readable storage medium” and “concurrently.” (See Appendix A for a summary of the law pertaining to the written description requirement.). With respect to the first rejection directed to a computer readable storage medium, it is respectfully submitted that a computer readable storage medium is a clearly defined subset of “computer readable medium.” Paragraph 0034 of the pending application (see Published Application No. 2005/0091486) states that “computer readable media may comprise computer storage media and communication media” and goes on to define each of the subsets “computer storage media” and “communication media.” Further, original claims 15-28 also recite the set “computer-readable medium.” Obviously, one subset of “computer readable media” is “computer storage media.” Therefore, “computer storage media” is “computer readable media.” Ergo, “computer readable storage media.” All that has been done is to amend original claims 15-25 from the set “computer-readable medium” to subset “computer-readable storage medium.”

One of ordinary skill would easily understand that “computer-readable storage medium” is the described subset “computer storage medium” of the set “computer readable media.” The application defines computer storage media to be computer readable media, which means that “computer storage media” is “computer-readable storage media.” Accordingly, it is requested that the rejection of claims 15-25 under 35 U.S.C. § 112, be reconsidered and withdrawn.

With respect to the second rejection directed to the term “concurrently,” it is respectfully submitted that the Office Action misinterprets the application and claim language. According to the IEEE definition, “concurrent,” “[p]ertain[s] to the occurrence of two or more activities within the same interval of time, achieved either by interleaving the activities or by simultaneous execution.” IEEE Std 100-1996, p. 196. Thus, while the succinct term “concurrent” is not specifically used in the Application, it clearly discloses just that. As such, one of ordinary skill would understand the specification to disclose the claimed subject matter.

The Application clearly and repeatedly describes concurrent operation of two operating systems. See, e.g., ¶ 0001 (“the invention relates to the use of plural execution environments (e.g., operating systems) on a single computing device . . . allow[ing] [GUI] elements to be owned by processes in each of the plural execution environments.”); ¶ 0028 (“two execution environments, such as operating systems, run side-by-side on a single machine”); ¶ 0041 (discussing side-by-side execution of two operating systems on a single computing device); ¶ 0042 (“FIG. 2 shows a system in which two operating systems 134(1) and 134(2) execute on a single computer 110. . . . operating system 134(2) can interact with operating system 134(1) in order to borrow operating system 134(1)’s infrastructure”); ¶ 0045 (“Providing A Graphical User Interface With Plural Computing Environments On A Single Machine”); FIG. 2 (showing two operating systems 134(1), 134(2) running concurrently on computer 110); FIGS. 3a, 3b, 6 (showing GUI elements 310, 320 concurrently shown on display 300, necessarily meaning that host OS and nexus OS are operating concurrently); FIG. 4 (showing concurrent display of nexus and host GUI elements, necessarily meaning that host OS and nexus OS are operating concurrently); original claim 1 (“A method for maintaining the security of data displayed on a display for a system comprising a secured execution environment and a second execution environment, comprising: storing an image of at least one nexus graphical user interface element associated with a first process running on said secured execution environment; and displaying said nexus graphical user interface element on said display completely on a display, such that no part of said nexus graphical user interface element is obscured by a graphical user interface element associated with said second execution environment on said display.”).

Written description law does not require express recitation of “concurrently” in the application because the understanding of one of ordinary skill is the test; not exact recitation of claim language. One of ordinary skill would not see “concurrently” as undisclosed new matter. One of ordinary skill would easily understand that the application discloses two execution environments operating concurrently on a system where concurrently executing processes within each execution environment concurrently generate display elements. One of ordinary skill would not see “concurrently” as undisclosed new matter. Thus, the Application clearly and repeatedly proves that the rejection of “concurrently” is without merit.

Accordingly, Applicants also respectfully request reconsideration and withdrawal of the rejection of claims 1-30 under 35 U.S.C. §112.

**Rejection of Claims 1, 3, 4, 12, 13, 17, 18, 26 and 27 under 35 U.S.C. 102(b)**

Claims 1, 3, 4, 12, 13, 15, 17, 18, 26, and 27 are rejected under 35 U.S.C. § 102(b) as being anticipated by US Patent No. 5,822,435, issued to Boebert *et al.* (hereinafter referred to as “Boebert”). (Office Action, pp. 4-7). Applicants respectfully traverse the rejection.

Boebert fails to teach the claimed subject matter. For example, Boebert fails to teach that two separate operating systems run concurrently on the same system and also fail to teach, as provided by amendment, that the two operating systems share a window manager.

Boebert fails to teach that two separate operating systems run concurrently on the same system. In contrast to this claimed subject matter, Boebert teaches two separate systems, where one system intercepts and overwrites I/O of the other system. Boebert discusses a user workstation 40 communicating with a host computer 60 over a network 50 in insecure (normal) and secure (trusted) modes. To facilitate secure communications, a separate add-on system 30 that re-routes, intercepts, controls and modifies the human interface or I/O (including display) signals of workstation (system) 40. Boebert teaches interception and modification of the display 10 of workstation 40 by physically re-routing workstation’s I/O through separate add-on system

30, which overlays part of the system's 40 display 10 during secure communications with host computer 60. Boebert, col. 5, ll. 36-39 ("Since window 82 is created outside of workstation 40, by trusted elements, it is not possible for malicious software in workstation 40 to control any of the video in trusted window 82."

As mentioned in previous remarks, Boebert, in col. 5, discloses a single operating system with two modes; a normal mode and a trusted mode. When in normal mode, the user may connect with non-secure network systems and perform operations that do not require validation or a trusted relationship between computer systems. In trusted mode, the operating system locks out non-trusted computer systems and network relationships to protect the trusted pathway such that the user may operate on sensitive, trusted data without the fear of this data being discovered or usurped by outside agents.

Boebert discloses a single operating system with two paths, non-trusted and trusted, and the ability to switch between the two, performing operations in first one, then the other, but not performing concurrent operations. There is no disclosure, explicit or implied, for "a second execution environment operating concurrently on the system" where the "second execution environment" comprises "a nexus [*i.e.*, a "high availability" operating system"] and the second execution environment comprising a different operating system." Rather, Boebert makes clear in col. 5, lines 28-33 that the operating modes are "either/or", not concurrent.

Thus, Boebert fails to teach that two operating systems (which each generate GUI elements) operate concurrently on the same system.

Additionally, as provided by amendment, Boebert fails to teach that the two operating systems share a window manager. In contrast to this claimed subject matter, as illustrated most in Boebert's FIG. 3, add-on system 30 has its own video manager 34 controlling display 10 that is not shared with workstation's 40 video manager outputting display information 44. Boebert switches between the video display provided by workstation 40 and add-on system 30 by

toggling switch 38 according to normal and trusted modes of operation. Boebert is so averse to sharing that Boebert effectively teaches away from it.

Thus, Boebert fails to teach that two operating systems (which each generate GUI elements) share the same window manager.

The foregoing remarks apply equally well to all pending claims given that both claim limitations are present in each independent claim. Accordingly, Applicants respectfully request withdrawal of the rejection.

**Rejection of Claims under 35 U.S.C. §103**

Claims 2 and 16 are rejected under 35 U.S.C. 35 § 103(a) as being unpatentable over Boebert in view of US Patent No. 6,512,529, issued to Janssen *et al.* (hereinafter referred to as “Janssen”), claims 5-8, 10, 11, 14, 19-22, 24, 25 and 28-30 are rejected under 35 U.S.C. 35 § 103(a) as being unpatentable over Boebert in view of and article by Ye, “Trusted paths for browsers: An open-source solution to web spoofing,” Feb 4, 2002 (hereinafter referred to as “Ye”) and claims 9 and 23 are rejected under 35 U.S.C. 35 § 103(a) as being unpatentable over Boebert in view of Ye and an article by Dhamija, “Hash Visualization in User Authentication,” April, 2000 (hereinafter referred to as “Dhamija”). (Office Action, pp. 8-17). Applicants respectfully traverse the rejections.

The foregoing remarks apply equally well to each of these rejections. The additional references are not cited to, and they fail to, teach or suggest the subject matter that Boebert fails to teach, as pointed out in the previous section. Thus, even if the alleged interpretation of the cited references and the alleged combination and modification of references were proper, the asserted combinations would still fail to teach or suggest the claimed subject matter. Thus, all claims are allowable for at least the same reasons provided in the previous section. Accordingly,

it is respectfully requested that the rejection of the claims under 35 U.S.C. § 103 be reconsidered and withdrawn.

In case the Examiner subsequently considers using Boebert in any rejection under 35 U.S.C. 35 § 103, the Examiner should be mindful of the prohibitions against rendering the system or method in a prior art reference unsatisfactory for its intended purpose, changing the principle of operation and combining references that teach away from their combination.

Any “proposed modification can not render the prior art unsatisfactory for its intended purpose” (M.P.E.P. § 2143.01.V). Further, “[t]he proposed modification cannot change the principle of operation of a reference.” (M.P.E.P. § 2143.01.VI). Further still, “[i]t is improper to combine references where the references teach away from their combination.” M.P.E.P. § 2145 X.D.2. Each “prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed subject matter.” M.P.E.P. § 2141.02 VI. “A reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant.” *In re Gurley*, 27 F.3d 551, 553 (Fed. Cir., 1994).

Any amendments made during prosecution of the pending application are without abandonment of subject matter. Applicant expressly reserves the right to, in the pending application or any application related thereto, reintroduce any subject matter removed from the scope of claims by any amendment and introduce any subject matter not present in current or previous claims.

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### **CONCLUSION**

In view of the foregoing amendments and remarks, it is respectfully submitted that this application is in condition for allowance. Reconsideration of this application and an early Notice of Allowance are respectfully requested.

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## APPENDIX A

“The specification shall contain a written description of the invention.” 35 U.S.C. § 112, ¶ 1. “Adequate description of the invention [under 35 U.S.C. § 112, ¶ 1] guards against the inventor’s overreaching by insisting that he recount his invention in such detail that his future claims [subsequent to original claims] can be determined to be encompassed within his original creation.” *Vas-Cath Inc. v. Mahurkar*, 935 F.2d 1555, 1560, 1561 (Fed. Cir. 1991), *citing Rengo Co. v. Molins Mach. Co.*, 657 F.2d 535, 551 (3d Cir.), *cert. denied*, 454 U.S. 1055 (1981).

Written description analysis involves comparing non-original claims to the original specification to determine whether, according to one skilled in the art, the original specification discloses the claimed invention or whether the claimed invention adds new matter to the original specification. *Texas Instruments Inc. v. ITC*, 871 F.2d 1054, 1062 (Fed. Cir. 1989) (“the essence of the description requirement of section 112, first paragraph [is] whether one skilled in the art, familiar with the practice of the art at the time of the filing date, could reasonably have found the ‘later’ claimed invention in the specification as filed.”) (emphasis added); *see also Reiffin*, 214 F.3d 1342 at 1347-48 (Newman, J., concurring); *Vas-Cath Inc. v. Mahurkar*, 935 F.2d 1555, 1560, 1562 (Fed. Cir. 1991).

The specification as filed, including the originally filed application claims, comprises the original disclosure. “The claims as filed are part of the specification, and may provide or contribute to compliance with § 112.” *Hyatt v. Boone*, 146 F.3d 1348, 1352 (Fed. Cir. 1998), *cert. denied*, 525 U.S. 1141 (1999). Therefore, all originally filed claims automatically satisfy the written description requirement as a matter of law. *Vas-Cath*, 935 F.2d at 1562, *citing In re Smith*, 481 F.2d 910, 914 (C.C.P.A. 1973) (“Where the claim is an original claim, the underlying concept of insuring disclosure as of the filing date is satisfied, and the description requirement has likewise been held to be satisfied.”); *see also In re Koller*, 613 F.2d 819, 823-24 (C.C.P.A. 1980) (“original claims constitute their own description. Later added claims of similar scope and wording are described thereby.”); *In re Gardner*, 480 F.2d 879, 879-80 (C.C.P.A. 1973) (the original claim itself is considered an “adequate ‘written description’... whether located among

the original claims or in the descriptive part of the specification”).

To satisfy the written description requirement, a patent disclosure must reasonably convey to a person skilled in the art that, as of the filing date, the inventor was in possession of the claimed matter. See *Hyatt v. Boone*, 146 F.3d 1348, 1354 (Fed. Cir. 1998), *cert. denied*, 525 U.S. 1141 (1999); see also M.P.E.P. § 2163 I (“To satisfy the written description requirement, a patent specification must describe the claimed invention in sufficient detail that one skilled in the art can reasonably conclude that the inventor had possession of the claimed invention.”). The inventor may show that he was in possession of the claimed subject matter at the time of filing by describing each limitation in later-filed claims. See *Lockwood v. American Airlines, Inc.*, 107 F.3d 1565, 1572 (Fed. Cir. 1997). “An applicant shows possession of the claimed invention by describing the claimed invention with all of its limitations using such descriptive means as words, structures, figures, diagrams, and formulas that fully set forth the claimed invention..” M.P.E.P. § 2163 I.

The written description (i.e., original application) need not describe the claimed subject matter in exactly the same terms used in the claims, so long as it allows persons skilled in the art to recognize that the inventor invented what is claimed. See *In re Gosteli*, 872 F.2d 1008, 1012 (Fed. Cir. 1989); see also M.P.E.P. § 2163.02 (“The subject matter of the claim need not be described literally (i.e., using the same terms or *in haec verba*) in order for the disclosure to satisfy the description requirement.”). It must be noted that MPEP “Guidelines do not constitute substantive rulemaking and hence do not have the force and effect of law.” M.P.E.P. § 2163.

Further, claims “must be interpreted in light of the teachings of the written description and purpose of the invention described therein.” *Apple Computer, Inc. v. Articulate Sys., Inc.*, 234 F.3d 14, 25 (Fed. Cir. 2000). Claims are not interpreted in a vacuum; they must be read in light of the application, which “may act as a sort of dictionary, which explains the invention and may define terms used in the claims.” *Markman v. Westview*, 52 F. 3d 967, 979 (Fed. Cir. 1995), *aff’d* 116 S.Ct. 1384 (1996). “The specification, of which the claims are a part, teaches about the problems solved by the claimed invention, the way the claimed invention solves those problems,

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and the prior art that relates to the invention. These teachings provide valuable context for the meaning of the claim language.” *Eastman Kodak Co. v. Goodyear Tire & Rubber Co.*, 114 F.3d 1547, 1554 (Fed. Cir. 1997)